

Claims:

1. A method for producing a polyester hollow body or its preform with reduced acetaldehyde content made of drop-shaped, ball-shaped or ball-like polyester granulate with a granulate diameter of less than 2 mm, characterized in that
 - the molecular weight of the polyester in the production step of the melt phase polymerisation is set to an IV value of 0.15 to 0.4 dl/g;
 - the melt is transformed by drop shaping into a drop-shaped, ball-shaped or ball-like shape and is thereafter solidified;
 - the molecular weight of the polyester is increased in the production step of the solid state polycondensation to an IV value of larger than 0.65 dl/g, and
 - the thus treated polyester material is introduced for forming into a forming means in order to obtain the hollow body or its preform.
2. A method according to claim 1, characterized in that the thus treated polyester material is plasticized at least partly before and/or during its forming.
3. A method according to claim 1 or 2, characterized in that the forming occurs by melting down or injection molding the thus treated polyester material.
4. A method according to claim 1 or 2, characterized in that the forming occurs by extrusion blow molding of the thus treated polyester material.
5. A method according to claim 3 or 4, characterized in that the melting down of the polyester material occurs by means of an extrusion apparatus.
6. A method according to one of the claims 2 to 5, characterized in that the melting down of the polyester material occurs by means of a microwave

apparatus.

7. A method according to one of the claims 3 to 6, characterized in that the melting down occurs at a temperature which is 5°C or more below a temperature T0, with T0 corresponding to the optimal processing temperature at which a similar polyester from a conventional production process can be processed.
8. A method according to claim 1 or 2, characterized in that the forming occurs by sintering of the thus treated polyester material, with the polyester material being introduced into a mold and being formed by sintering into a preform.
9. A method according to one of the preceding claims, characterized in that the polyester concerns a polyethylene terephthalate or a copolymer of polyethylene terephthalate, and the maximum temperature in the production step of solid state polycondensation is at or below 230°C, preferably at or below 225°.
10. A method according to one of the preceding claims, characterized in that the granulate diameter lies in the range of 0.4 to 1.9 mm, preferably in the range of 0.7 to 1.6 mm.
11. A method according to one of the preceding claims, characterized in that the polyester concerns a copolymer of polyethylene terephthalate, with the diol component consisting to more than 94% of ethylene glycol and the dicarboxylic acid component consisting to approximately 100% of terephthalic acid.
12. A method according to one of the preceding claims, characterized in that the polyester concerns a copolymer of polyethylene terephthalate, with the diol component consisting to more than 98% of ethylene glycol.
13. A method according to one of the preceding claims, characterized in that the polyester concerns a copolymer of polyethylene terephthalate, with the

dicarboxylic acid component consisting to more than 96% of terephthalic acid.

14. A method according to one of the preceding claims, characterized in that the step of preheating to the after-condensation temperature in solid state polycondensation occurs in a period of 1 to 10 minutes, preferably 2 to 8 minutes.
15. A method according to one of the preceding claims, characterized in that the polyester is removed from the drop forming apparatus after the drop forming with the help of a discharging apparatus, with the discharging apparatus preferably concerning a fluid or fluidized bed with a perforated floor through which gas flows and one or several product discharge openings.
16. A method according to one of the preceding claims, characterized in that a hollow body, especially a bottle, with reduced acetaldehyde content is produced from the preform with reduced acetaldehyde content.
17. A polyester hollow body or its preform, produced according to the method in accordance with one of the preceding claims, characterized in that the acetaldehyde content in the hollow body or its preform is reduced in comparison with the acetaldehyde content (AA0) of a conventionally produced hollow body or its preform.
18. A polyester hollow body or its preform according to claim 17, characterized in that the acetaldehyde content in the hollow body or its preform is reduced by 10% or more in comparison with the acetaldehyde content (AA0) of a conventionally produced hollow body or its preform.
19. A polyester material for producing a polyester hollow body or its preforms with reduced the acetaldehyde content, with the polyester material being present as a drop-shaped, ball-shaped or ball-like polyester granulate with a granulate diameter of less than 2 mm, characterized in that

- the molecular weight of the polyester material in a production step of the melt phase polymerization is set to an IV value of 0.15 to 0.4 dl/g;
- the melt is transformed by drop shaping into a drop-shaped, ball-shaped or ball-like shape and is thereafter solidified;
- the molecular weight of the solidified polyester material is increased in the production step of the solid state polycondensation to an IV value of larger than 0.65 dl/g, and
- the thus treated polyester material is introduced for forming into a forming means in order to obtain the polyester hollow body or its preform.

20. A polyester material according to claim 17, characterized in that the melting down occurs at a temperature which is 5°C or more below a temperature T0, with T0 corresponding to the optimal processing temperature at which a similar polyester from a conventional production process can be processed.

21. A polyester material according to claim 17 or 18, characterized in that the polyester material concerns a polyethylene terephthalate or a copolymer of polyethylene terephthalate, and the maximum temperature in the production step of solid state polycondensation is at or below 230°C, preferably at or below 225°.

22. A polyester material according to one of the claims 17 to 19, characterized in that the granulate diameter lies in the range of 0.4 to 1.9 mm, preferably in the range of 0.7 to 1.6 mm.

23. A method according to one of the claims 17 to 20, characterized in that the step of preheating to the after-condensation temperature in solid state polycondensation occurs in a period of 1 to 10 minutes, preferably 2 to 8 minutes.

24. A polyester hollow body or its preform, produced from a material according to one of the claims 19 to 23, characterized in that the acetaldehyde content in the hollow body or its preform is reduced in

comparison with the acetaldehyde content (AA0) of a conventionally produced hollow body or its preform.

25. A polyester hollow body or its preform according to claim 24, characterized in that the acetaldehyde content in the hollow body or its preform is reduced by 10% or more in comparison with the acetaldehyde content (AA0) of a conventionally produced hollow body or its preform.